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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,733	01/18/2002	Jonathan Christopher Hardwick	MS164198.1/40062.162US01	4234
22801	7590	09/18/2006	EXAMINER	
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			ALHIJA, SAIF A	
			ART UNIT	PAPER NUMBER
			2128	

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/053,733	Applicant(s) HARDWICK ET AL.	
	Examiner Saif A. Alhija	Art Unit 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-14, 17-19, 21-27, 29-32, 34-36 and 39-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-14, 17-19, 21-27, 29-32, 34-36, and 39-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>092205</u> |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-3, 5-14, 17-19, 21-27, 29-32, 34-36, and 39-41 have been presented for examination.

Claims 4, 15-16, 20, 28, 33, and 37-38 are cancelled.

Response to Arguments

2. i) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6 March 2006 has been entered.

ii) Applicant's arguments filed 6 March 2006 have been fully considered but they are not persuasive.

iii) With respect to Applicants comments on Page 13 "Claim Rejections under 35 USC 102", the Examiners did not agree that the claims as amended would overcome the office's rejection. The Examiners relayed to the Applicant that assuming the claims were amended it may become necessary to update the search. However, the reference still reads on the claims as currently presented therefore the rejection is maintained.

iv) In addition, a 101 rejection has been cited due to non-statutory nature of the claims. See rejection below.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

MPEP 2106 recites:

The claimed invention as a whole must accomplish a practical application. That is, it must

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produce a "useful, concrete and tangible result" State Street 149 F.3d at 1373, 47 USPQ2d at 1601-02. A process that consists solely of the manipulation of an abstract idea is not concrete or tangibles. See *In re Warmerdam*, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed.Cir. 1994). See also *Schrader*, 22 F.3d at 295, 30 USPQ2d at 1459.

3. Claims 1-3, 5-14, 17-19, 21-27, 29-32, 34-36, and 39-41 are rejected under 35 U.S.C. 101

because the claimed invention is directed to non-statutory subject matter.

i) The claims are directed to the steps of generating, receiving, evaluating, and selecting. This appears to be a mere manipulation of data resources and as such does not produce a useful, concrete and tangible result'.

ii) The claims also recite a computer program product as well as a performance simulation system. It should be noted that code (i.e., a computer software program) does not do anything per se. Instead, it is the code stored on a computer that, *when executed*, instructs the computer to perform various functions. The following claim is a generic example of a proper computer program product claim;

A computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to perform the following:

Function A
Function B
Function C, etc...

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-3, 5-14, 17-19, 21-27, 29-32, 34-36, and 39-41 are rejected** under 35 U.S.C. 102(b) as being clearly anticipated by **E. Papaefstathiou “Design of a Performance Technology Infrastructure to Support the Construction of Responsive Software”**, hereafter referred to as **Papaefstathiou**.

Regarding Claims 1

Papaefstathiou discloses A computer program product encoding a computer program for executing on a computer, the computer program simulating performance of a software system including one or more resources, the computer process comprising:

generating one or more workload definition sequences defining the software system, each workload definition sequence including a plurality of workload request nodes and each of the workload request nodes defining one or more component events, the workload definition sequence including at least two of the workload request nodes having a sequential relationship relative to different simulation intervals;

(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)

receiving the one or more workload definition sequence sequences into an evaluation engine;
and**(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)**

evaluating the one or more workload definition sequences to simulate the performance of the software system the evaluating operation comprising: **(Page 97, Section 3.1 Figure 1,**

Events/Evaluation Directives)

selecting according to a run-time policy and for at least one of the component events one of a plurality of hardware resources;

Regarding Claims 2

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Papaftstathiou discloses The computer program product of claim 1 wherein each request node is defined independently of any of the hardware model instances. (Page 97, Section 3.1, Paragraph 2, Lines 7-8. Figure 1.)

Regarding Claims 3

Papaftstathiou discloses The computer program product of claim 1 wherein each workload request node defines a transaction associated with a one or more resources included in the software system. (Page 98, Section 3.1 Paragraph 3, Line 1)

Regarding Claims 5

Papaftstathiou discloses The computer program product of claim 1 wherein the one or more workload sequences are generated prior to the receiving and evaluating operations and substantially define all workload request nodes for simulating performance of the software system. (Page 97-98, Section 3.1 Figure 1)

Regarding Claims 6

Papaftstathiou discloses The computer program product of claim 1 wherein each workload request node defines a device option characterizing constraints on how the workload request node may be assigned to one of the one or more resources included in the software system. (Page 98, Section 31 Paragraph 3)

Regarding Claims 7

Papaftstathiou discloses The computer program product of claim 1 wherein at least one workload sequence includes a fork node defining a split of one workload sequence branch into a plurality

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of workload sequence branches. **(Page 98, Section 3.1 Paragraph 4, Line 1-2. Page 98, Section 3.2, Paragraph 1, Line 1-3)**

Regarding Claims 8

Papaefstathiou discloses The computer program product of claim 1 wherein at least one workload sequence includes a join node defining a combination of a plurality of workload sequence branches into a single workload sequence branch. **(Page 101, Section 4, Paragraph 3, Lines 12-19)**

Regarding Claims 9

Papaefstathiou discloses The computer program product of claim 1 wherein the computer process further comprises:

receiving at least one of a monitoring trace, statistical data, and a workload specification to generate the one or more workload definition sequences. **(Page 97, Section 3.1, Paragraph 2, Lines 1-2)**

Regarding Claims 10

Papaefstathiou discloses The computer program product of claim 9 wherein the operation of receiving at least one of a monitoring trace, statistical data, and a workload specification comprises:

receiving the monitoring trace defining a sequence of software system requests relating to an application request associated with the application. **(Page 97, Section 3.1, Paragraph 2, Lines 1-2)**

Regarding Claims 11

Papaefstathiou discloses The computer program product of claim 9 wherein the operation of receiving at least one of a monitoring trace, statistical data, and a workload specification comprises:

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receiving the statistical data defining a statistical distribution of one or more application requests associated with the application. **(Page 98, Section 3.1, Paragraph 3, Lines 7-11)**

Regarding Claims 12

Papaefstathiou discloses The computer program product of claim 9 wherein the operation of receiving at least one of a monitoring trace, statistical data, and a workload specification comprises:

receiving the workload specification defining a set of resource request descriptions associated with the software system. **(Page 98, Section 3.1, Paragraph 3, Lines 1-2)**

Regarding Claims 13

Papaefstathiou discloses The computer program product of claim 1 wherein each workload definition sequence comprises a start node associated with a start time, and the evaluating operation comprises:

activating at least one of the workload definition sequences, if the start time associated with the start node of the workload definition sequence satisfies the simulation interval value. **(Page 102, Section 5, Figures 6 and 7)**

Regarding Claims 14

Papaefstathiou discloses The computer program product of claim 1 wherein said one or more component events are recorded in an event queue. **(Page 102, Section 5, Figures 6 and 7)**

Regarding Claims 17

Papaefstathiou discloses The computer program product of claim 1 where the evaluating operation further comprises:

receiving prior to the selecting operation, one of the component events from the event queue; **(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)**

identifying, prior to the selecting operation, a resource of the one or more resources included in the software system associated with the component event; and **(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)**

simulating, after the selecting operation, the component event received from the event queue using the selected one of the plurality of hardware model instances. **(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)**

Regarding Claims 18

Papaefstathiou discloses A performance simulation system for simulating performance of a software system, the performance simulation system comprising:

a workload generator generating one or more workload definition sequences defining the software system, each workload definition sequence including a plurality of workload request nodes and each of the workload request nodes defining one or more component events, the workload definition sequence including at least two of the workload request nodes having a sequential relationship relative to different simulation intervals; and **(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)**

an evaluation engine receiving the one or more workload simulation sequences and evaluating the one or more workload definition sequences including by scheduling, according to a run-time policy and for at least one of the component events one of a plurality of hardware model instances each representing a resource in

Regarding Claims 19

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Papaefstathiou discloses The performance simulation system of claim 18 wherein each workload request node defines a transaction associated with a resource one of the resources included in the software system. (Page 98, Section 3.1 Paragraph 3, Line 1-3)

Regarding Claims 21

Papaefstathiou discloses The performance simulation system of claim 18 wherein each workload request node defines a device option characterizing constraints on how the workload request node may be assigned to a resource in the software system. (Page 98, Section 3.1 Paragraph 3, Line 1-3)

Regarding Claims 22

Papaefstathiou discloses The performance simulation system of claim 18 wherein at least one workload sequence includes a fork node defining a split of one workload sequence branch into a plurality of workload sequence branches. (Page 98, Section 3.1 Paragraph 4, Lines 1-2. Page 98, Section 3.2, Paragraph 1, Line 1-3)

Regarding Claims 23

Papaefstathiou discloses The performance simulation system of claim 18 wherein at least one workload sequence includes a join node defining a combination of a plurality of workload sequence branches into a single workload sequence branch. (Page 101, Section 4, Paragraph 3, Lines 12-19)

Regarding Claims 24

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Papaefstathiou discloses The performance simulation system of claim 18 wherein v each workload definition sequence comprises a start node associated with a start time, and the evaluation engine comprises:

a simulation clock incrementing a simulation interval value; and **(Page 102, Section 5. Figures 6 and 7)**

an activator activating one of the workload definition sequences, if the start time associated with the start node of the workload definition sequence satisfies the simulation interval value. **(Page 102, Section 5. Figures 6 and 7)**

Regarding Claims 25

Papaefstathiou discloses The performance simulation system of claim 18 wherein the evaluation engine comprises a. sequence processor translating at least one-of each of the workload request nodes into their defined one or more component events. **(Page 97-98, Section 3.1.)**

Regarding Claims 26

Papaefstathiou discloses The performance simulation system of claim 25 wherein the evaluation engine comprises: an event queue receiving the component events from the sequence processor. **(Page 102, Section 5. Figures 6 and 7)**

Regarding Claims 27

Papaefstathiou discloses The performance simulation system of claim 25 wherein the evaluation engine further comprises a scheduler module that performs the scheduling operation and is capable of scheduling all of the component events with hardware model instances that each represent a resource in the software system. **(Page 102, Section 5. Figures 6 and 7)**

Regarding Claims 29

Papaefstathiou discloses The performance simulation system of claim 18 wherein the evaluation engine comprises a simulator determining a duration of a component event scheduled for one of the plurality of hardware model instances. **(Page 102, Section 5. Figures 6 and 7)**

Regarding Claims 30

Papaefstathiou discloses A method of simulating performance of a software system including one or more resources, the method comprising:

generating one or more workload definition sequences defining the software system. each workload definition sequence including a plurality of workload request nodes and each of the workload request nodes defining one or more component events, the workload definition sequence including at least two of the workload request nodes having a sequential relationship relative to different simulation intervals; **(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)**

receiving the one or more workload definition sequences into an evaluation engine; and **(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)**

evaluating the one or more workload definition sequences to simulate the performance of the software system the evaluating operation comprising: **(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)**

selecting according to a run-time policy and for at least one of the component events one of a plurality of hardware model instances associated with one of the one or more resources included in the software system. **(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)**

Regarding Claims 31

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Papaefstathiou discloses The method of claim 30 wherein each request node is defined independently of any of the hardware model instances. (Page 97, Section 3.1, Paragraph 2, Lines 7-8. Figure 1)

Regarding Claims 32

Papaefstathiou discloses The method of claim 30 wherein each workload request node defines a transaction associated with one of the one or more resources included in the software system. (Page 98, Section 3.1 Paragraph 3, Line 1-3)

Regarding Claims 34

Papaefstathiou discloses The method of claim 30 wherein the one or more workload sequences are generated prior to the receiving and evaluating operations and substantially define all workload request nodes for simulating performance of the software system. (Page 98, Section 3.1 Paragraph 3, Line 1-3)

Regarding Claims 35

Papaefstathiou discloses The method of claim 30 wherein each workload definition sequence comprises a start node associated with a start time and the evaluating operation comprises: activating at least one of the workload definition sequences, if the start time associated with the start node of the workload definition sequence satisfies the to simulation interval value. (Page 102, Section 5, Figures 6 and 7)

Regarding Claims 36

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Papaefstathiou discloses The method of claim 30 wherein the said one or more component events are recorded in an event queue. **(Page 102, Section 5, Figures 6 and 7)**

Regarding Claims 39

Papaefstathiou discloses The method of claim 36 where the evaluating operation further comprises:

receiving, prior to the selecting operation, one of the component events from the event queue; **(Page 97, Section 3.1 Figure 1, Events/Evaluation Directives)**

identifying, prior to the selecting operation, a resource of the one or more resources included in the software system associated with the component event; **(Page 97, Section 3.1 Figure 1,**

Events/Evaluation Directives) and

simulating, after the selecting operation, the component event received from the event queue using the selected one of the plurality of hardware model instances. **(Page 97, Section 3.1 Figure 1,**

Events/Evaluation Directives)

Regarding Claims 40

Papaefstathiou discloses The computer program product of claim 1 wherein the run-time policy comprises a scheduling policy indicating which of the plurality of hardware model instances to select for said at least one of the component events based on which resource associated with a hardware model instance will first be free. **(Page 97, Section 2, Paragraph 1)**

Regarding Claims 41

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Papaefstathiou discloses The computer program product of claim 1 wherein the selecting operation is based on a current load of each of said one or more resources included in the software system. (Page 97, Section 2, Paragraph 1)

Conclusion

5. All Claims are rejected.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saif A. Alhija whose telephone number is (571) 272-8635. The examiner can normally be reached on M-F, 11:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAA

August 18, 2006

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